

METHOD AND APPARATUS FOR WATER FLOW SENSING AND CONTROL

Abstract of the Disclosure

This invention relates to water or liquid flow detection or sensing systems
5 that are further capable of actively controlling the flow of the water or other liquid
that is being sensed.

The invention uses a microphone or other acoustic sensor to detect the
acoustic signature of liquid flow through a pipe. Water or liquid flowing through a
pipe or a system of pipes generates an acoustic signature that can be detected,
10 measured, and analyzed. Based on the analysis of the acoustic signature of the
liquid flow, a determination is made whether a fault or leak in the line has
occurred. If a determination is made that a fault has occurred, a water shutoff
valve is activated ceasing the flow of water or other liquid. The system further
includes audible and visual warning devices to indicate whether a fault has
15 occurred as well as general system status. The system is configured to control
the water main leading into a building or it is configured to control the water
leading into a specific hose or appliance such as a toilet or washing machine.
The whole building system uses a computer to analyze the acoustic signatures
detectable in the house and can determine if one of these signatures has been
20 occurring for a time period outside an acceptable limit and determining that a
fault has occurred.

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